ABSTRACT OF THE DISCLOSURE

A stacked semiconductor package is formed by forming a semiconductor wafer having a plurality of semiconductor chips with chip pads on their upper sides, where the chips are arranged in pairs; sawing the wafer along edges of the semiconductor chips; adhering a bonding tape to adjacent pairs of the semiconductor chips, wherein conductive interconnections on the bonding tape electrically couple corresponding chip pads of adjacent chips; cutting the bonding tape so that only adjacent pairs of the chips remain attached to one another; and stacking the adjacent pairs of semiconductor chips so that the upper sides of the chips are substantially parallel. The method may include an additional step of adhering a plurality of solder balls on the bonding tape to serve as external leads of the package. Further, the adjacent pairs of semiconductor chips may be attached to opposite sides of a heat conducting plate which serves to dissipate heat generated by the chips.